Primary Land Development Bank Ltd., Shorapur

(36) SRI RAJA PID NAIK (Shorapur).— Will the Minister for Co-operation be pleased to state:-

(*a*) whether it is a fact that the Department of Co-operation has conducted enquiry on mismanagement in the working of the Primary Land Development Bank, Ltd., Shorapur, in the year 1974-75 if so, the result of such enquiry ;

(*b*) the major defects pointed out by the Auditor in the year 1974-75 and action taken by the Secretary of the Bank to rectify the defects ;

SRI K. H. RANGANATH (Minister for Co-operation).—

(*a*) No.

(*b*) A Statement is kept in the Legislature Library.

Damage of Transformers and other auxiliaries at Bhadravathi Power House

(37) SRI ABDUL KHUDDUS ANWAR (Bhadravathi).—Will the Minister of State for Information and Power be pleased to state :—

(*a*) the reasons for the damage of two transformers and other auxiliaries at Bhadravathi Power House ;

(*b*) the total loss and the cost of each transformer damaged ;

(*c*) whether such heavy damage has ever occurred during last 28 years ;

(*d*) whether the damage was due to negligence or bad maintenance or inefficiency or due to some shortage :

(*e*) whether any enquiry in connection with this heavy damage was held , if so, the report of enquiry may be placed on the Table of the House ;

(*f*) whether Chief Engineer visited the spot immediately after the accident took place, if so what was his opinion and whether his report, if any be placed on the Table of the House ?

SRI B. SUBBAYYA SHETTY (Minister of State for Information and Power).—

(*a*) Several lightning arresters failed leading to the failure of one of the transformers due to lightning surges.

(*b*) The damaged transformer had served its normal life. The original cost of the transformer was Rs. 1,85,000. The Board has decided to scrap the transformer considering the extent of damage. The scrap value is more than the depreciated value after 30 years of service. Hence, there is no financial loss.

(*c*) Yes.

(*d*) It was not due to any negligence or inefficiency.

(*e*) No enquiry was considered necessary.

(*f*) Yes. A copy of his report is appended-Annexure VI.

ANNEXURE VI

Copy of Letter No. CEE(S)/G&T/20533-34, dated 13th November 1976 from the Chief Engineer, Electricity (South), K.E.B, Bangalore, addressed to the Additional Secretary, Karnataka Electricity Board Bangalore-9, and Copied to the Chief Engineer, Electricity (General) K.E.B., Bangalore.

Subject,—Breaekout of fire and consequent damages to the switchgear and a 15 MVA BTH transformer at Bhadravathi MUSS on 11th August 1976.

Reference.—(1) T.O. Lr. No. CEE(S) G & T/13266, dated 19th August 1976.

(2) Yr. Lr. No. KEBB9/3385/76-77. dated 14th October 1976.

With reference to the above, I write to state that I visited Bhadravathi on 21st August 1976 and had a thorough inspection of the MUSS and the damaged equipments. My observations are as follows.—

At the 13.2 kV. NGEF switchgear, two incoming panels and one feeder panel were completely burnt out. The CTs., PTs., and the circuit breakers were charred with the result that it was difficult to trace out the nature of the fault. It was learnt that on the day of the accident, the lightning arrester located near the station on the 13.2 kV. new town feeder had failed and subsequently it was found that 15 L. As on the Shimoga Town feeder and other feeders at different points had also failed. One of the jump connection at the 4 pole structure of the 110 kV. Shimoga-Bhadravathi

transmission line was found cut and dangling. It may be presumed that the lightning surge must have resulted in flashover at the Bank P.Ts., the P.Ts, might have caught fire and the fire spread to the other bank and one of the adjoining feeders.

The 110 kV. line tripped at Shimoga on over current relay and at NRS Bhadravathi on distance relay. The 110 kV. breaker at the MUSS Bhadravathi did not trip. It was however opened out manually by the Operator, when the fire was noticed. There was no indication of the tripping of the 13. 2 kv. bank or feeler breakers and hence it can only be presumed that the fault must have been developed at the 13.2 kV. P.Ts,

It was learnt that originally three incoming panels has been supplied to Bhadravathi, two of which were connected to the two transformers and the third used as a feeder panel removing the P.Ts. It was also learnt that the P.Ts. of the incoming panels failed during 1972 and the P Ts. installed outdoor were utilised. Recently when the power factor meters and energy meters were fixed to the various feeders, the capacity of the outdoor P.Ts was found insufficient and hence the P.Ts. removed from the 3rd incoming panel and which were idle, were connected to the bank panel and serviced on 10th April 1976 The P.Ts. were of AEP make & generally found not very satisfactory. It was possible that these P.Ts. might have failed due to the lightning surge. There must have been flash over and the P.Ts caught fire and as the breaker was located just above them, the fire must have spread through the breaker oil.

The breaker provided on the 110 kV. side and controlling both the transformers should have tripped for this fault. But it did not trip. The breakers on either side of the 110 kV, limit at MRS Shimoga and NRS Bhadravathi have tripped and must have made the line dead before the transformer breaker could act. The Superintending Engineer, Electrical KEB., Shimoga informed that the station DC supply was being continuously checked by the maintenance staff and the battery was frequently examined by the JE(E) Maintenance for specific gravity etc., and just after the accident at 11-30 A.M. the battery voltage was measured and found to be 24 Volts. It was noticed from the records that the 13.2 kV. feeders have tripped a No. of times during the month prior to the accident and that the Honehonnur feeder and tripped about 25 minutes earlier to the time of the accident.

At the time of accident, the AEG transformer was taking the load and the BTH transformer was idle charged. The BTH transformer proved faulty when it was test charged around 9.30 P.M. to

resume the loads. As the transformer was idle charged, the 13.2 kV. side cable was also charged upto the breaker panel and breaker panel had caught fire along with the adjacent panel. So the transformer must have subjected to severe shock when the control panel caught fre and when it was test charged, it proved faulty.

The normal station loads of about 10 MW. are now being fed by the 15 MVA AEG transformer and there is no stand by. I have addressed the Convener, Technical Committee, to place the following suggestions for the consideration of the Commmitee to have either a stand by transformer or an alternate feeding arrangement in case of emergency.

1. Shifting the 15 MVA BTH transformer which is under heat-run at Dandeli.

2. Shifting one 10 MVA 110/32/11 kV. transformer which has been allotted to Sagar as a Standby to the 33 kV. loads of both Sagar and Hiriadka. Also shifting 2 of 5 MVA 11/13.2 kV. Auto transformers from Sagar along with the above;

3. There is a spare panel at the 13.2 kV. switchgeer of M/s. V.I S.L. and ample transformer capacity. If they agrees, we can draw power to an exent of 6 MWs. providing a suitable cable for about 200 metres and an overhead line for linking our stations Suitable metering and the terms of drawing power have also to be worked out.

There is no space at the repair bays of Shimoga NRS and Bangalore for moving the faulty BTH transformer. The V I.S.L. authorities have agreed to get this transformer opened out and examined at their repair bay and I have instructed the Superintending Engineer, Electrical, Shimoga, to move the transformer for lifting the core and thoroughly examining and tests by the M.T. staff. A spare limb is available and if only on phase is faulty, it will be arranged to replace the same and recondition the transformer.

This is for kind information of the Board.

Starting of Sahyadri Sakkare Karkkane in Shimoga

(38) SRI ABDUL KUDDUS ANWAR (Bhadravathi).—Will the Chief Minister be pleased to state :—

(*a*) the present stage of starting of Sahyadri Sakkare Karkhane in Shimoga ;